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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,914	10/29/2003	Gen Sasaki	244171US2 DIV	4524

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EXAMINER

TRAN, NHAN T

ART UNIT PAPER NUMBER

2622

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/694,914	Applicant(s) SASAKI, GEN	
	Examiner Nhan T. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/29/2003 & 1/29/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 7 and 9 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/459,574.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/459,574, filed on 12/13/1999.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 10/29/2003 & 1/29/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Objections

3. Claim 7 is objected to because of the following informalities: in line 15 of claim 7, the limitation "**a cumulative addition processing~in which**" should be corrected as -- **a cumulative addition processing in which** --. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma Yoshihiro (JP 10-042181) in view of Konishi (US 5,784,100).

Regarding claim 9, Yoshihiro discloses an image processing circuit of an image input device (2) which performs a predetermined image processing of image photographed by an image pickup device (CCD) in the image input device (Fig. 1 and Abstract), the circuit comprising:

a real time processing unit (processing circuit 5 including detailed processing section 21, Figs. 1 & 2) in which a predetermined general image processing (e.g., AE, white balance, and gamma corrections, etc.) of a pixel data being photographed by the image pickup device and inputted sequentially is performed by real time processing (paragraphs [0024] & [0030]-[0032] and [0066]);

a main memory (either DRAM 6, Flash memory 7 or PC card 8) that stores a pixel data outputted from at least the real time processing unit, in image frame units (paragraphs [0024] - [0025]);

a central control unit (MPU 3) in which respect to image temporarily stored in the main memory, exceptional image processing (i.e., JPEG compression) except for the general image processing is executed as a software program processing (JPEG program processing), and then stored in the main memory (paragraphs [0033] and [0054]).

Yoshihiro also discloses that the real time processing unit has a pixel compensation function (automatic white balance compensation function) with which

Art Unit: 2622

each pixel data photographed by said image pickup device and inputted sequentially is multiplied by a predetermined pixel compensation parameter (white balance parameter) previously stored in said main memory (working DRAM 6) for a predetermined pixel (see paragraphs [0049] & [0066]).

Yoshihiro does not disclose the predetermined pixel compensation including shading compensation. However, as taught by Konishi, an imaging apparatus includes a shading correction circuit that compensates shading occurring due to nonuniformity in illumination by multiplying the input image data with a shading correction factor so as to improve image quality (see Konishi, col. 1, lines 10-14, 47-59 and col. 3, lines 50-65).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the imaging apparatus of Yoshihiro to include a pixel shading compensation function as taught by Konishi to compensate shading occurring due to nonuniformity in illumination by multiplying the input image data with a shading correction factor so as to improve image quality.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honma Yoshihiro (JP 10-042181) in view of Hidari (US 5,905,533).

Regarding claim 7, Yoshihiro discloses all limitations as analyzed in claim 9 above except for disclosing that the real time processing unit has a cumulative addition processing function of, when each pixel data photographed by said image pickup device and inputted sequentially extends multiple frames, repeating, a predetermined number

Art Unit: 2622

of times, a cumulative addition processing in which a pixel data residing on the same position in the preceding frame temporarily stored in said main memory is added to each pixel data in each of said frames from said image pickup device and the result is stored in said memory.

Hidari teaches a real time image processing unit (Figs. 1 & 4; unit 12) that has a cumulative addition processing circuit (23 or 3) to perform pixel addition by repeatedly accumulating pixel data output from a memory over and over again to reduce noise contained in pixel data (see Hidari, col. 8, line 44 – col. 9, line 15). As the number of times of accumulative addition increases, the degree of noise is decreased (see Hidari, Figs. 6-9).

Therefore, it would have been obvious to one of ordinary skill in the art to enhance the real time processing unit in Yoshihiro by including a cumulative addition circuitry such that the pixel data inputted repetively from the main memory to the real processing unit would be cumulative by a number of times to reduce noise contained in the pixel data.

Allowable Subject Matter

6. Claims 8, 10 & 11 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 8, the prior art of record fails to teach or fairly suggest the combination of all limitations required in claim 8 that includes "...*said real time processing unit has a circulating addition processing function of, when each pixel*

Art Unit: 2622

*data photographed by said image pickup device and inputted sequentially extends multiple frames, repeating, a predetermined number of times, a circulating addition processing in which a pixel data residing on the same position in the preceding frame temporarily stored in said main memory and **each** pixel data in each of said frames from said image pickup device are respectively subjected to **multiplication with a predetermined weighting factor, followed by addition**, and the results are stored in said memory, and said weighting factor used in said circulating addition processing comprising a **first factor** to be multiplied to a pixel data residing at the same position in the preceding frame temporarily stored in said main memory, and a **second factor** to be multiplied to each pixel data in each frame from said image pickup device, **said first and second factors being set such that the sum of these factors is always one.***

Regarding claims 10 & 11, these claim are allowed for the same reason provided in claim 8.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-

Art Unit: 2622

7371. The examiner can normally be reached on Monday - Thursday, 7:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT.

A handwritten signature in black ink, appearing to read 'David Ometz', with a long horizontal line extending to the right.

DAVID OMETZ
SUPERVISORY PATENT EXAMINER